

Claims

- [c1] An apparatus for evaluating a radio frequency (RF) identification system, the apparatus comprising:
a test fixture including a base having a plurality of tag positions for locating an RF tag relative to an RF antenna.
- [c2] The apparatus of claim 1, further comprising a height adjustable mount configured to hold the RF tag at a selected vertical position relative to the RF antenna, wherein the mount is configured to be positioned at a selected one of a set of mount positions on the base of the test fixture.
- [c3] The apparatus of claim 2, wherein a first set of the plurality of tag positions is provided on the mount in a first linear direction; and the mount positions extend in a second linear direction that is substantially perpendicular to the first linear direction such that the RF tag can be positioned in a variety of three-dimensional tag positions.
- [c4] The apparatus of claim 3, wherein a second set of the plurality of tag positions extend in a radial fashion on the base of the test fixture.

- [c5] The apparatus of claim 2, wherein the mount includes a plurality of stackable members, a lowermost stackable member including a positioner configured to mate with at least one of the mount positions on the base of the test fixture, and at least each other stackable member includes at least one positioner configured to mate with a complementary positioner located on another stackable member.
- [c6] The apparatus of claim 5, wherein each positioner includes one of a male coupler and a female coupler configured to mate with a complementary female coupler and a complementary male coupler, respectively.
- [c7] The apparatus of claim 1, wherein a first set of the plurality of tag positions extend in a first linear direction, and another set of the plurality of tag positions extends in a second linear direction that is substantially perpendicular to the first linear direction.
- [c8] The apparatus of claim 7, wherein a second set of the plurality of tag positions extend in a radial fashion on the base of the test fixture.
- [c9] The apparatus of claim 1, wherein the test fixture is made of a material that has no RF effect on the RF antenna.

- [c10] The apparatus of claim 1, wherein the test fixture further includes a mount for positioning the test fixture as an element to which the RF tag is to be coupled in operation.
- [c11] A system for using the test fixture of claim 1, the system comprising means for determining the RF antenna sensing field.
- [c12] A method of evaluating a radio frequency (RF) identification system, the method comprising the steps of:
 - placing a test fixture proximate an RF antenna of the RF identification system;
 - positioning an RF tag at a plurality of tag positions on the test fixture; and
 - evaluating sensing of the RF tag by the RF antenna at each of the tag positions.
- [c13] The method of claim 12, wherein the plurality of tag positions includes at least one of: at least one vertically different tag position and at least one different orientation.
- [c14] The method of claim 12, wherein the evaluating step includes obtaining a three dimensional plot of a sensing field of the RF antenna.
- [c15] The method of claim 12, further comprising the step of

adjusting one of the RF tag and the RF antenna to ensure reading of the RF tag by the RF antenna.

- [c16] The method of claim 12, wherein the evaluating step includes determining at least one of: a sensing field of the RF antenna and a sensitivity strength of the RF tag.
- [c17] The method of claim 12, wherein the evaluating step is conducted in the presence of an RF field affecting parameter.
- [c18] A method of evaluating a radio frequency (RF) identification system including an RF tag and an RF antenna for sensing the RF tag, the method comprising the steps of: placing a test fixture in proximity to the RF antenna; positioning the RF tag at a plurality of tag positions on the text fixture; evaluating sensing of the RF tag by the RF antenna at each of the tag positions; determining at least one of: a sensing field of the RF antenna and a sensitivity strength of the RF tag; and adjusting one of the RF tag and the RF antenna to ensure reading of the RF tag by the RF antenna during operation of the RF identification system.
- [c19] The method of claim 18, wherein the determining step includes obtaining a three dimensional plot of a sensing

field of the RF antenna.

- [c20] The method of claim 18, wherein the placing step includes mounting the fixture to an in-the-field location.